



## REVERSE KIT KIT PN 2874048

### Application:

For Polaris 2002-2003 Snowmobiles with Edge Chassis and the new style chaincase

**NOTE:** Separate sprocket option packages must be ordered for use with this kit. Options are listed in the Dealer Manuals.

**IMPORTANT:** Due to the complexity of this kit, we strongly recommend that it be installed by your Polaris dealer.

Before you begin, read these instructions and check to be sure all parts and tools are accounted for. Please retain these installation instructions for future reference and parts ordering information.

### WARNINGS:

- Read and understand all warnings. **This snowmobile is capable of excessive reverse speed!** Reverse operation can be dangerous even at moderate speeds. Steering control become unstable in reverse. Misuse of reverse can result in serious or fatal injury.
- The transmission may not always be in the gear indicated by the shift lever. Always apply the throttle slowly until the correct gear is assured.
- Make sure the shift lever is shifted completely into forward or reverse position. Do not force the shift lever into reverse if resistance is felt.
- The gears may not always be aligned for shifting into reverse. Forcing the lever will cause the cable to stretch and shifting may come out of adjustment. If resistance is felt, apply the throttle to move the gears to a different position and try to shift again.
- Sometimes the drive belt will drag in the drive clutch, causing slight tension in the transmission and difficult shifting. Shut the engine off to remove this tension and ease shifting. This should only happen during break-in of a new belt or if the drive/driven clutch center distance is too long, which will require belt tension adjustment by your dealer.
- On machines with reverse it's especially important to maintain track tension as specified in the Owner's Manual. **WARNING:** If specified track tension is not maintained, severe damage to the machine may occur, which can result in loss of vehicle control. Loss of control can result in severe personal injury or death.
- Never attempt to shift into reverse while the machine is moving. **CAUTION:** If the machine has not come to a complete stop before shifting, damage will occur to the chaincase or transmission.

### This kit includes:

<u>Qty.</u>	<u>Part Description</u>	<u>Part No.</u>	<u>Qty.</u>	<u>Part Description</u>	<u>Part No.</u>
1 ..	Reverse Gear .....	1341410	1 ..	Cotter Pin, 1/16 x 1/2 .....	7661010
1 ..	Sprocket .....	1341241	1 ..	Clevis Pin, 1/4 x 3/4 .....	7661843
1 ..	Cover Assembly .....	1341447	1 ..	Reverse Warning Decal .....	7079002
1 ..	Loctite .....	2870963	1 ..	Snow Flap .....	5433961-1106
1 ..	Drive Coupler .....	5130720	5 ..	Rivet, 3/16 .....	7621472
1 ..	Driver Coupler Retainer .....	5130727	1 ..	Pinion Gear Assembly .....	1341075
1 ..	Pinion Shaft .....	5131770	1 ..	Shift Lever .....	5434142
1 ..	Chain Retention Bracket .....	5246421	1 ..	Screw, 1/4-20 x 2 .....	7518052
1 ..	Shift Lever Bracket .....	5246624	2 ..	Rivet, 3/16 .....	7661637
1 ..	Compression Spring .....	7041887	1 ..	Cotter Pin .....	7661401
2 ..	Screw, 10-24 x 3/8 .....	7512019	3 ..	Rivet Burr .....	7555904
1 ..	Bolt, 5/16-18 x 2.25 .....	7517581	1 ..	Gasket .....	5411497
1 ..	Spring Washer, 5/16 .....	7552901	2 ..	Nut .....	7542440
1 ..	Washer, 1 x 1.625 .....	7555871	1 ..	Instructions .....	9917473
2 ..	Washer, .632 x 1.125 .....	7555877			

**You will need to supply:**

3/8" Drive Socket Set (10 mm)  
#2 Phillips Drive Screwdriver  
Locking Pliers  
Standard Socket Head Wrench Set  
Standard Combination Wrench Set  
Exhaust Spring Puller  
Center Punch  
General Purpose Grease  
Pop Rivet Gun  
Clean Shop Rags

Allen Wrench  
1/2" short socket  
Polaris Chaincase Oil  
Universal Joint Extension  
Deburrer  
Squeegee  
1/4" Socket Set with Swivel and Extension  
Drill  
3/16" Drill Bit

**IMPORTANT:** Perform all items correctly and completely.

**WARNING**

Gasoline is extremely flammable and explosive under certain conditions. Do not smoke or allow open flames or sparks in or near the area where the work is performed. If you should get gasoline in your eyes, or if you should swallow gasoline, see your doctor immediately. If you should spill gasoline on your skin or clothing, immediately wash it off with soap and water and change clothing. Never start the engine or let it run in an enclosed area. Gasoline powered engine exhaust fumes are poisonous and can cause loss of consciousness and death in a short time.

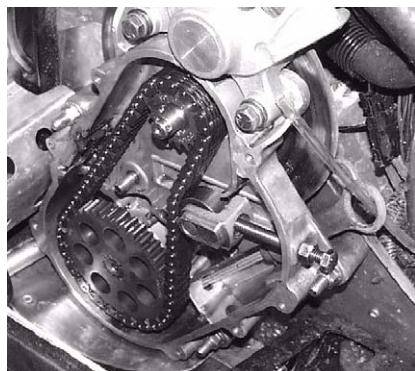
**INSTALLATION INSTRUCTIONS**

1. Open the hood.
2. Turn off the fuel valve and clamp the vent line.
3. Reach under the belly pan and remove the drain plug from the chaincase using an Allen wrench. Drain the oil into an appropriate container and discard oil properly.
4. CAREFULLY release the springs holding the muffler and remove the muffler.
5. Remove the chaincase cover.
6. Loosen the chain tightener and remove the chain and sprockets.
7. Clean the chaincase and remove oil from the chaincase using shop towels.  
**NOTE:** Dispose of excess oil or oily towels properly.

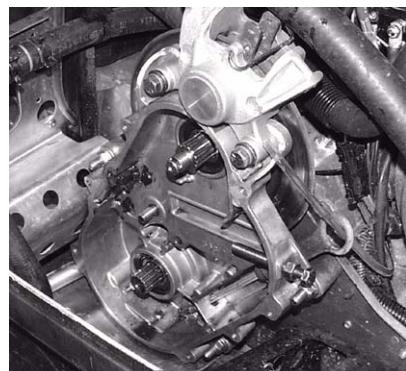
8. Apply Loctite 271/Permabond 118 to the Phillips head screws (PN 7512019) and install them into the chain retention bracket (PN 5246421) making sure the holes are clean of all oil and debris. Tighten the screws to 32 in. lbs. (3.7 Nm). **NOTE:** The tab on the top of the bracket will fit into the slot in the reverse chaincase cover. See illustration on the following page for reference.
9. Use the nuts (PN 7542440) to remove the center chaincase cover retaining stud (ProX). Lock the nuts together and then turn out the stud. It may be necessary to use heat.
10. Remove the lock nut and install the pinion shaft (PN 5131770) with the flat side facing the chaincase. Tighten the pinion shaft by inserting a 9/16 wrench on the flat areas of the shaft. Apply Loctite™ (PN 2870963) to secure the shaft to the stud.



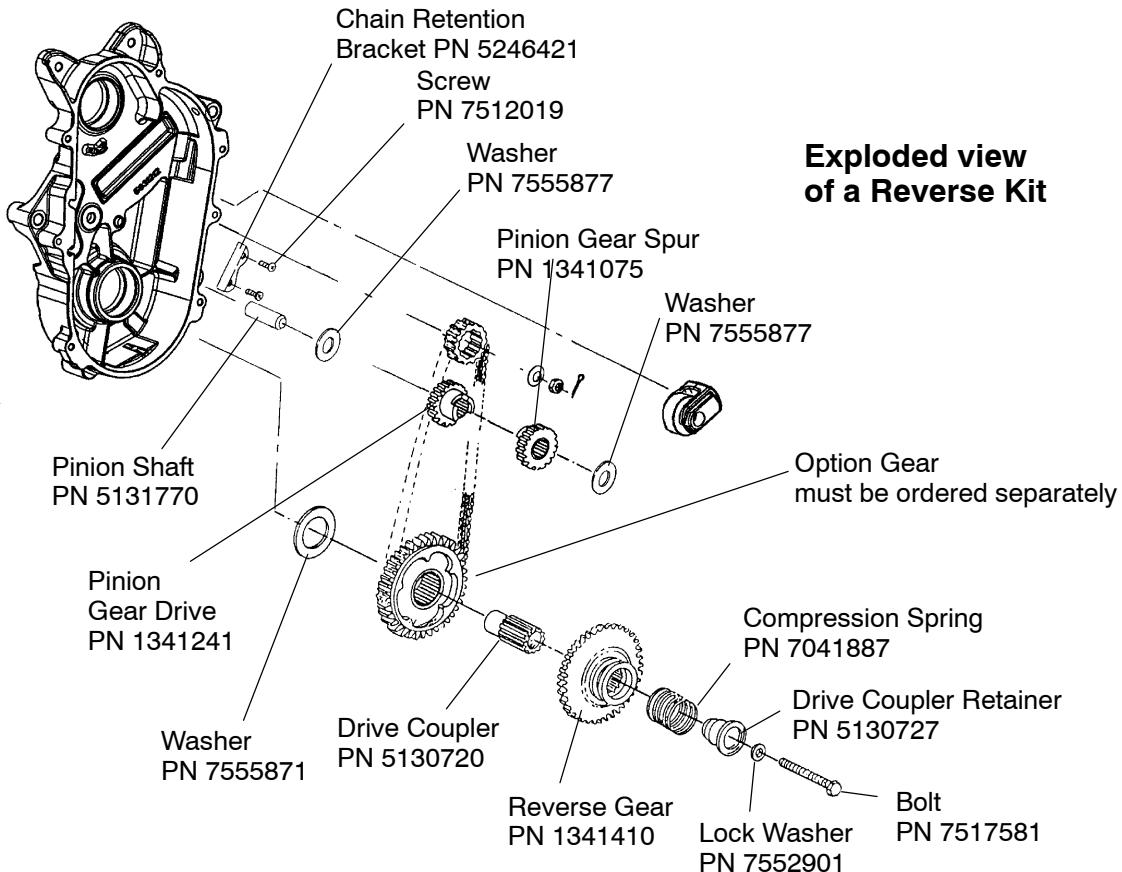
Step 3



Step 5



Steps 6-7



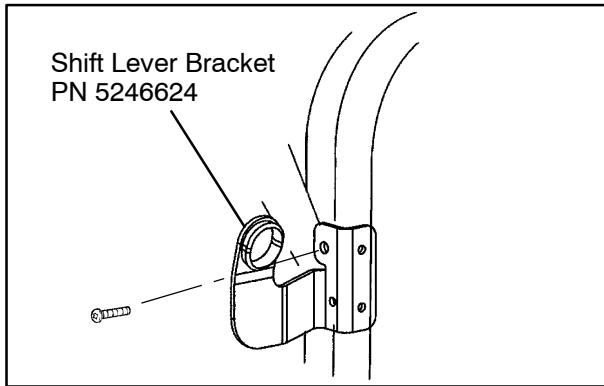
11. Install the pinion gear washer (PN 7555877) on the pinion shaft.
12. Install the washer (PN 7555871) on the drive shaft.
13. Install the existing chain and top sprocket and the bottom option sprocket and chain pinion drive gear (PN 1341241) into the chaincase. **NOTE:** The chain pinion gear has the wide gear face of the two gears. Chain, sprockets and pinion gears must be installed together. Check the options parts list for proper gear. The option gear must be installed with the locks facing outward for locking with reverse gear.
14. Index the drive coupler (PN 5130720) into the reverse gear assembly (PN 1341410) before installation to be sure there is no binding in the spline area. To do this, hold the reverse gear in a horizontal position with the hole vertical. Let the coupler slide through under its own weight. Mark the orientation of the drive coupler and reverse gear to be sure indexing is maintained during installation. **NOTE:** If binding occurs, rotate the coupler until it slides through freely.

**WARNING:** Improper indexing of the drive coupler in reverse gear during installation could cause binding of gears and failure to shift, resulting in the vehicle going in the opposite direction indicated by the shift lever. This could result in severe injury or death to operator, passenger or bystanders.



Steps 13-14

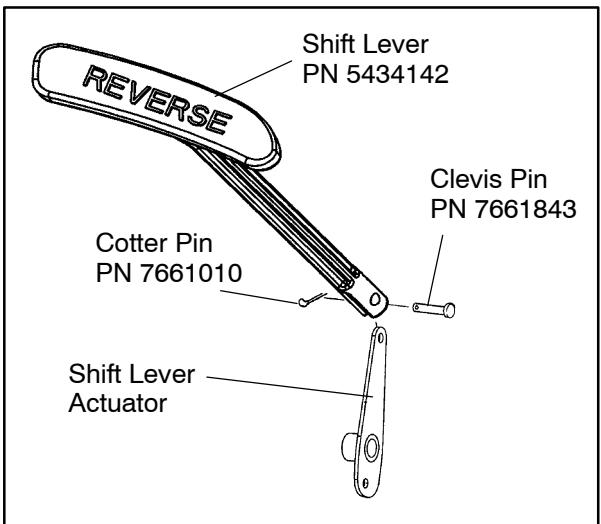
15. Install the reverse gear assembly (PN 1341410) with the spring (PN 7041887) and drive retainer coupler (PN 5130727) onto the drive coupler.
16. Apply pressure to the spring retainer and install a lock washer (PN 7552901) and bottom gear bolt (PN 7517581) using a 1/4" ratchet with a swivel extension.
17. Tighten the top gear using the existing nut and washer. Apply the parking brake and torque the nut to 60 ft. lbs. (81 Nm). Install the cotter pin (PN 7661401) and bend both legs.
18. Install the tightener and adjust the chain by finger tightening.  
**NOTE:** The chain should have slight play of .050" (.1 cm) above the tightener roller.
19. Tighten the lock nut on the adjuster bolt.
20. Install the spur pinion gear (PN 1341075) and outer washer (PN 7555877), making sure that the cogs interlock.
21. Reinstall the bottom drain plug removed in step 2.
22. Install the new chaincase seal (PN 5411497) on the new reverse cover and install the chaincase cover assembly (PN 1341447). Make sure the shift fork fits into the groove on the reverse gear.
23. Install the cover retainer bolts removed in step 5. Torque to 5 ft. lbs. (7 Nm). A 1/4" swivel is needed for the rear bottom bolt. Replace the standard cover retaining screw at the rear bottom location with the 1/4-20x2 screw (PN 7518052) supplied with the kit.
24. Remove the RH console screw and install the shift lever bracket behind the console tab. Reinstall screw to secure.



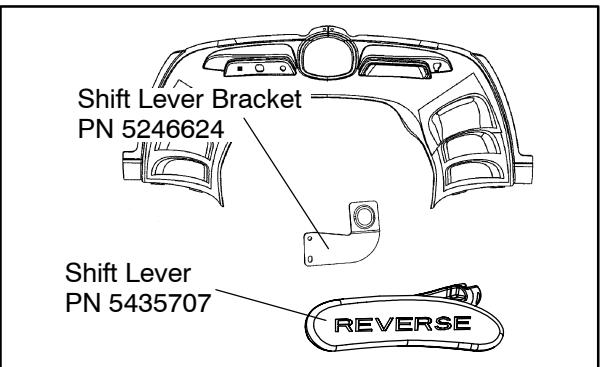
Step 24

25. Use the two 3/16" holes in the bracket for a template and drill holes into the steering hoop. Secure the bracket with two rivets (PN 7661637).  
**NOTE:** You may need to remove the brake caliper to complete this step.

26. Using the illustrations for reference, install the shift lever (PN 5434142) from the kit and attach it to the shift lever actuator with the clevis pin (PN 7661843). Bend both cotter pin ends after installation (PN 7661010). Close the hood.

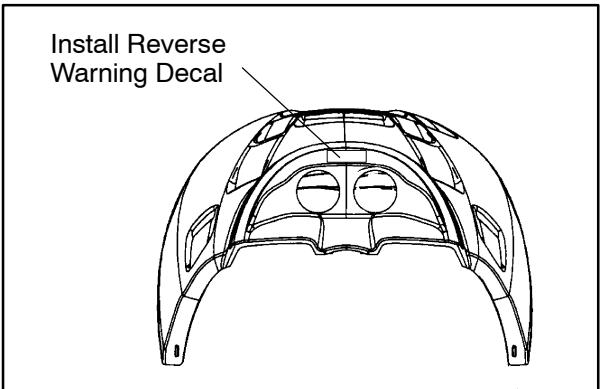


Step 26



Step 26

27. Using the illustration for reference, clean the area where the reverse warning decal is to be applied. Remove the backing of the decal and affix it to the console. Use a squeegee to smooth it out.



Step 27

28. Fill the chaincase with Polaris chaincase oil.
29. Reinstall the muffler.
30. Using the drill and a 3/16" drill bit, remove the rivets securing the snow flap.
31. Using the rivets (PN 7621472) supplied with kit, install the snow flap, popping the three center rivets first. Install rivet burrs (PN 7555904) on the inside of the tunnel.
32. Using the snowflap for a template, transfer drill the outside two holes into the rear close off panel. Install the outside rivets to complete the snowflap installation.
33. Turn the fuel valve to "On" and slowly unclamp the ventline. **NOTE:** The tank may have accumulated some pressure.
34. Test the machine at low speeds before putting into service.

## **REVERSE KIT MAINTENANCE:**

### **Chain tension:**

Maintain the proper chain tension by loosening the lock nut and finger tightening the adjuster bolt and locking the lock nut.

### **Oil level:**

Using Polaris chaincase oil, maintain the proper level in the chaincase. **CAUTION:** Do not mix or use other types of lubricant. Excessive wear to chain, sprockets and bearings will result.

### **Oil change:**

Change oil annually with Polaris Chain case Lubricant.